

## **Claims**

1. A dual-band antenna for receiving signals of a first frequency and a second frequency, said antenna comprising:  
a first planar conductive element; and  
a second planar conductive element, orthogonal to the first planar conductive element, comprising a first part and a second part, the first part comprising a first side and the second part comprising a second side;  
wherein, the first part is configured to receive signals of the first frequency, the second part is configured to receive signals of the second frequency, the first and the second planar conductive elements are connected at a node, the node is located at an intersection point of the first and the second parts, a length of the first side substantially equals to a quarter of a corresponding wavelength of the first frequency, and a length of the second side substantially equals to a quarter of a corresponding wavelength of the second frequency.
2. The dual-band antenna of claim 1, wherein the first part and the second part respectively have a rectangular shape.
3. The dual-band antenna of claim 2, wherein the second planar conductive element further comprises a gap located between the first part and the second part.
4. The dual-band antenna of claim 2, wherein the first planar conductive element has a L-shaped structure and comprises a feed point located at a bending point of the L-shaped structure.
5. The dual-band antenna of claim 4, wherein the dual-band antenna further comprises:  
a planar base, orthogonal to the second planar conductive element, for fixing the dual-band antenna on a device;  
a planar ground element orthogonal to the second planar conductive element; and

a connection element for connecting the first planar conductive element and the planar ground element to the planar base.

6. The dual-band antenna of claim 3, wherein the first planar conductive element has an L-shaped structure and comprises a feed point located at a bending point of the L-shaped structure.
7. The dual-band antenna of claim 6, wherein the dual-band antenna further comprises:
  - a planar base, orthogonal to the second planar conductive element, for fixing the dual-band antenna on a device;
  - a planar ground element orthogonal to the second planar conductive element; and
  - a connection element for connecting the first planar conductive element and the planar ground element to the planar base.
8. A dual-band antenna for receiving signals of a first frequency and a second frequency, comprising:
  - a first planar conductive element;
  - a second planar conductive element, orthogonal to the first planar conductive element, comprising a first part and a second part, the first part being configured to receive signals of the first frequency and comprising a first side, the second part being configured to receive signals of the second frequency and comprising a second side;
  - a planar base, orthogonal to the second planar conductive element, for fixing the dual-band antenna on a device;
  - a planar ground element orthogonal to the second planar conductive element; and
  - a connection element for connecting the first planar conductive element and the planar ground element to the planar base;wherein, the first and the second planar conductive elements are connected at a node,

the node is located at an intersection point of the first and the second parts, a length of the first side substantially equals to a quarter of a corresponding wavelength of the first frequency, and a length of the second side substantially equals to a quarter of a corresponding wavelength of the second frequency.

9. The dual-band antenna of claim 8, wherein the first and the second parts respectively have a rectangular shape.
10. The dual-band antenna of claim 9, wherein the second planar conductive element further comprises a gap located between the first and the second parts.
11. The dual-band antenna of claim 9, wherein the first planar conductive element has an L-shaped structure and comprises a feed point located at a bending point of the L-shaped structure.
12. The dual-band antenna of claim 10, wherein the first planar conductive element has an L-shaped structure and comprises a feed point located at a bending point of the L-shaped structure.
13. An electronic device with a wireless communication function, comprising:
  - a dual-band antenna for receiving signals of a first frequency and a second frequency, comprising:
    - a first planar conductive element;
    - a second planar conductive element, orthogonal to the first planar conductive element, comprising a first part and a second part, the first part comprising a first side, the second part comprising a second side; and
    - a planar ground element orthogonal to the second planar conductive element;
  - a planar base, orthogonal to the second planar conductive element, for fixing the dual-band antenna on the electronic device; and
  - a connection element for connecting the first planar conductive element and the

planar ground element to the planar base;

wherein, the first and the second planar conductive elements are connected at a node,

the node is located at an intersection point of the first and the second parts, a

length of the first side substantially equals to a quarter of a corresponding

wavelength of the first frequency, and a length of the second side substantially

equals to a quarter of a corresponding wavelength of the second frequency.

14. The electronic device of claim 13, wherein the first and the second parts respectively have a rectangular shape.
15. The electronic device of claim 14, wherein the second planar conductive element further comprises a gap located between the first and the second parts.
16. The electronic device of claim 14, wherein the first planar conductive element has an L-shaped structure and comprises a feed point positioned at a bending point of the L-shaped structure.
17. The electronic device of claim 15, wherein the first planar conductive element has an L-shaped structure and comprises a feed point positioned at a bending point of the L-shaped structure.